122804

Date Out EFB: 28 MAR 1984

To: G. LaRocca
Product Manager 15
Registration Division (TS-767)

From: Samuel M. Creeger, Chief
Review Section No. 1
Exposure Assessment Branch
Hazard Evaluation Division (TS-769)

Attached please find the environmental fate review of:

Reg./File No.: 12280-4

Chemical: Avermectin B_1a

Type Product: Insecticide

Product Name: MK-936

Company Name: Merck

Submission Purpose: review rotational crop study protocol to support use on celery and cotton

ZBB Code: ?

Date In: 3/16/84

Date Completed: 28 MAR 1984

ACTION CODE: 450

EAB # 4243

TAIS (level II)	Days
67	0.2

Deferrals To:

_____ Ecological Effects Branch

_____ Residue Chemistry Branch

_____ Toxicology Branch

1. INTRODUCTION

1.1 The registrant, Merck Sharp and Dohme, has submitted a protocol on conducting a rotational crop study using avermectin B_{1a}, a new insecticide for use on celery and cotton.

2. COMMENTS AND RECOMMENDATIONS

2.1 Test Plots and Experimental Area - The soil used in the studies should preferably be taken directly from major cotton and celery growing areas. Also, the climate and application timing should simulate actual use conditions.

2.2 Application of Test Compound - Application by pipette is acceptable if the avermectin can be applied evenly over the soil surface to ensure that the rotational crops will contact avermectin residues regardless of where they are planted in the tanks.

I recommend that slightly more than the maximum label rate (such as 1.1X) be applied. This will allow the Agency reviewer to reach a firm conclusion in the event of borderline results.

It is not clear if avermectin is to be applied to cotton a maximum of 3 times or a maximum of 10 times per season. It is clear, however, that the rotational crop study will involve 10 applications. In the event uptake of residues is found, a rotational crop restriction will be needed, even though the label (possibly) calls for only 30% of what was applied in the study to be applied under field conditions. Therefore, if avermectin is to be applied to cotton at a maximum of only 3 times at 0.02 lb ai/A per application, then the rotational crop study should reflect that use rate.

2.3 Plant Horticulture - Lettuce is acceptable, but I recommend using carrots and wheat as the root and small grain crops, respectively. Do not over irrigate, but do irrigate to simulate field moisture conditions.

The rotational crops should be planted 30 days, 120 days and 1 year after the final application of avermectin to the soil.

2.4 Sampling Program - Crops should be sampled at 1/4, 1/2, and full maturity. The soil should also be sampled at these times. The ^{14}C activity in the sampled plants is to be identified, if possible. In the event residues are found, a non-radiolabeled (cold) rotational crop study may be needed.

Data showing stability of avermectin and its degradation products during the frozen storage period will be needed.

Samuel M. Creeger
March 18, 1984
Section #1/EAB
Hazard Evaluation Division

Avermectin science review

Page _____ is not included in this copy.

Pages 3 through 10 are not included in this copy.

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___ Identity of product inert ingredients

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___ Description of product quality control procedures

___ Identity of the source of product ingredients

___ Sales or other commercial/financial information

___ A draft product label

___ The product confidential statement of formula

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